17

A.D. 1852 . . . . N° 850.

SPECIFICATION

OF

WILLIAM HENRY WINCHESTER.

SPLINTS FOR SURGICAL PURPOSES.

LONDON:
PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY:
PUBLISHED AT THE QUEEN'S PRINTING OFFICE, EAST HARDING STREET,
NEAR FLEET STREET.
Price 6½d.
1854.

A.D. 1852 . . . . N° 850.

Splints for Surgical Purposes.

LETTERS PATENT to William Henry Winchester, of Tamerton Foliott, near Plymouth, in the County of Devon, and of Berners Street, in the County of Middlesex, Surgeon, for the Invention of "Improvements in Splints."

Sealed the 9th February 1853, and dated the 24th November 1852.

PROVISIONAL SPECIFICATION left by the said William Henry Winchester at the Office of the Commissioners of Patents, with his Petition, on the 24th November 1852.

I, William Henry Winchester, of Tamerton Foliott, near Plymouth, in the County of Devon, and of Berners Street, in the County of Middlesex, Surgeon, do hereby declare the nature of the said Invention for "Improvements in Splints" to be as follows:—

My object is to produce a splint so adjustible as to take the form of a limb or joint, or of the spine, and to be readily fixed in such form and position; and this I attain by means of several separate pieces of wood, metal, or other suitable material joined longitudinally by means of joints which can be fixed in any desired position; in some cases I also apply a joint which allows of a lateral motion to the splint. The mode of operation is as follows:— Supposing a thigh bone to be fractured, I apply my splint to the corresponding thigh, and cause it to take its exact shape and form by pressing the parts thereof against it; I then tighten up and fasten the joints between each separate piece comprising the splint, and thus obtain the exact shape of the limb, and apply I my splint to the fractured limb. In the event of both thighs being fractured, or of the patient having only one, then I set my splint to the shape of the limb after having placed the bones in perfect apposition. My splint might also serve as a mould from which to cast or otherwise form another splint, but I would recommend the use of that splint by which the form of the limb had been taken.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said William Henry Winchester in the Great Seal Patent Office on the 24th May 1853.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, William Henry Winchester, of Tamerton Foliott, near Plymouth, in the County of Devon, and of 43, Berners Street, in the County of Middlesex, Surgeon, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Twenty-fourth day of November, in the year of our Lord One thousand eight hundred and fifty-two, in the sixteenth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said William Henry Winchester, Her special licence, that I, the said William Henry Winchester, my executors, administrators, and assigns, or such others as I, the said William Henry Winchester, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "Improvements in Splints," upon the condition (amongst others) that I, the said William Henry Winchester, by an instrument in writing under my hand and seal, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said William Henry Winchester, do hereby declare the nature of my said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement, reference being had to the Drawings annexed (that is to say):—

The object of my Invention is to produce a splint so adjustible as to take the form of a limb or joint, or of the spine or any part of the body, and to be readily fixed in such form and position; and this I attain by means of several separate pieces of wood, metal, or other suitable material joined longitudinally by means of joints which can be fixed in any desired position; in some cases I also apply a joint or joints which allows of a lateral motion to the splint. The mode of operation is as follows:—Supposing a thigh bone to be fractured, I apply my splint to the corresponding thigh, and cause it to take its exact shape and form by pressing the parts thereof against it; I then tighten up and fasten the joints between each separate piece composing the splint, and thus obtain the exact shape of the limb; and I apply my splint to the fractured limb. In the event of both thighs being fractured, or of the patient having only one, then I set my splint to the shape of the limb after having placed the bones in perfect apposition. My splint might also serve as a mould from which to cast or otherwise form another splint, but I would recommend the use of that splint by which the form of the limb had been taken. The manner in which my Invention may be performed is shewn in the annexed Drawings.

Figure 1, is a plan, and Figure 2, a side view, of a splint constructed according to my Invention. A, A, are a series of pieces of metal, wood, gutta percha, or other suitable material, which form the pads of the splint; these pieces are hollowed on that side which is to be placed next to the injured limb, so as better to adapt it to the part. B, B, are strips of metal secured to the pads A, A, by countersunk screws *a*, *a*, and connected together by means of the hinge joints C, C; the pins of each of the joints are made with square parts which fit into square holes in the portions *b*, *b*, of the ends of the strips B, while the ends of the pins are cut with a screw-thread to correspond with the nuts *c*, *c*; the joints can be tightened up by a key fitting the shoulders of the pins so as to render the splint perfectly rigid after it has been set into the required mould or shape. D, and E, are joints which may be employed when requisite, to allow of motion to the knee or elbow joints, or to the hip or to any other portion of the body requiring a lateral motion; they can be rendered perfectly rigid by the pinching screws *d*, and *e*. F, is the ancle piece. G, G, are studs or pins which project from the pieces B, and are for purpose of attaching the straps for fastening the splint to the broken limb or part requiring support.

Figures 3, and 4, are views of the foot piece, which is attached to the splint by the plate H. This plate has punched in it a series of circular recesses, so that when the plate has passed through the square socket *h*, on the ancle piece F, it can be permanently fixed by the pinching screw *i*, whereby the foot piece can be readily adjusted. I, I, are stays for keeping the foot piece in its proper position, and for preventing the leg from swaying or falling over. K, K, are small wheels or rollers which turn upon an axle passed through the tube L, attached to the bottom of the foot piece;—these rollers are for the purpose of allowing the patient to move easily, draw up the leg, and prevent any strain upon the injured part. In case of any wound occurring in the line of the splint, or on that part of the body to which the splint is applied, I insert in the length of the splint bent pieces of metal, such as represented in Figure 5, over the wound, by which means access can be had for the purpose of dressing such wound, and also all irritation at that part is prevented.

Figures 6, and 7, represent a modification in the construction of the knee joints; D, being made similar to the ordinary rule joints: and Figures 8, 9, and 10, are also modifications in the hip-joints E, and are of a construction analogous to the ball and socket joint. Either of these joints allows of all the necessary motion of the hip, without deranging the other parts of the splint.

Figures 11, and 12, are respectively plan and edge view of a portion of a splint composed of thin plates of metal, lined or covered with leather or other suitable material, and connected together by the joints *a*, *a*. Should it be desired, the plates forming the pads may be made of perforated metal, or of the shape represented in Figure 13.

Figure 14, shews the plan I adopt in forming the straps to fasten the splint upon the part to which it is applied. Between the parts A, and B, of the strap, I insert a strip or piece of vulcanized india rubber, or other suitable elastic material *a*, so that the strap will expand and admit of any swelling that might take place. The ends of the pieces A, B, have eyelet holes through which a string may be laced when it is required to prevent or to limit the expansion of the strap.

Figure 15, represents a mode which I adopt in order to take up any looseness in the straps or to dispense with the use of buckles. A, is one of the pads in which is cut the slot *a*, through which one end of the strap is passed, the other end being fixed to a stud pin. B is a small roller turning in the brackets *b*, *b*, and on which the end of the strap is wound. C, is a ratchet wheel on one end of the roller, into the teeth of which the paul D, takes and prevents the roller from running back. When it is desired to tighten the strap, all that is requisite is to turn the roller the required number of teeth of the ratchet-wheel.

And having now described the nature of my said Invention, and the manner in which the same is to be performed, I declare that what I claim is, the manufacture of adjustable splints composed of several pieces of wood, metal, or other suitable material, united by joints and capable of being pressed or fitted into any desired form or shape, and of being fixed in such form or shape by the tightening of the union joints by which the several pieces are united.

In witness whereof, I, the said William Henry Winchester, have hereunto set my hand and seal, this Twenty-fourth day of May, One thousand eight hundred and fifty-three.

W. H. WINCHESTER. (L.S.)

LONDON:
Printed by George Edward Eyre and William Spottiswoode,
Printers to the Queen's most Excellent Majesty. 1854.

FIG. 1.

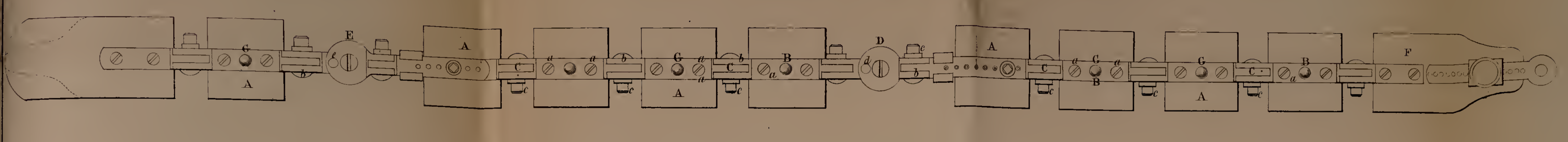


FIG. 3.

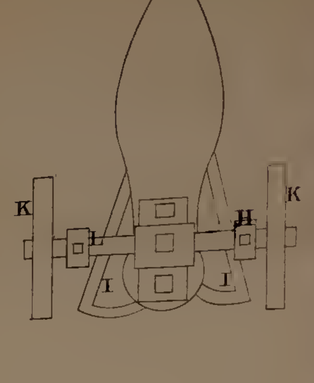


FIG. 2.

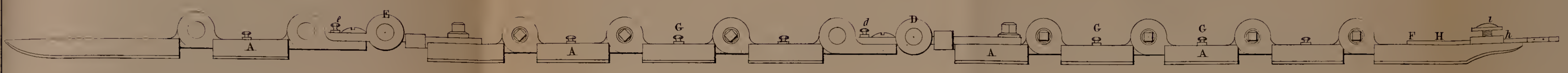


FIG. 4.

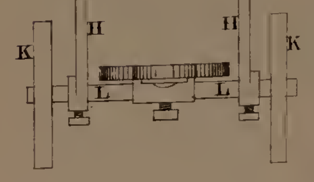


FIG. 5.

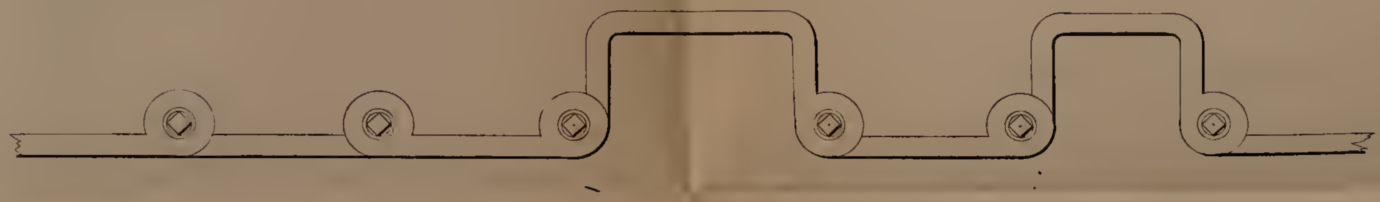


FIG. 6.

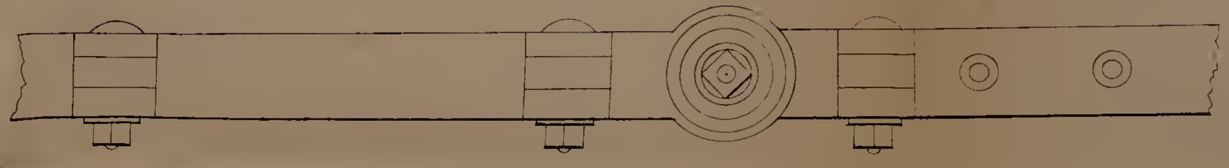


FIG. 7.

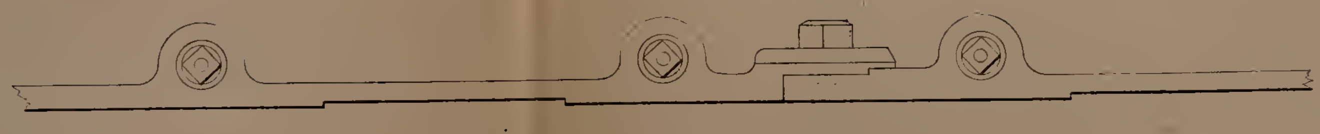


FIG. 8.

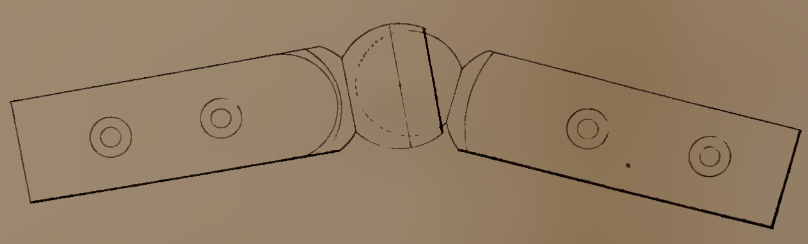


FIG. 9.

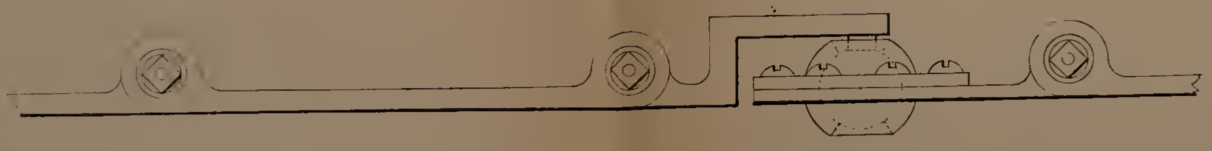


FIG. 10.

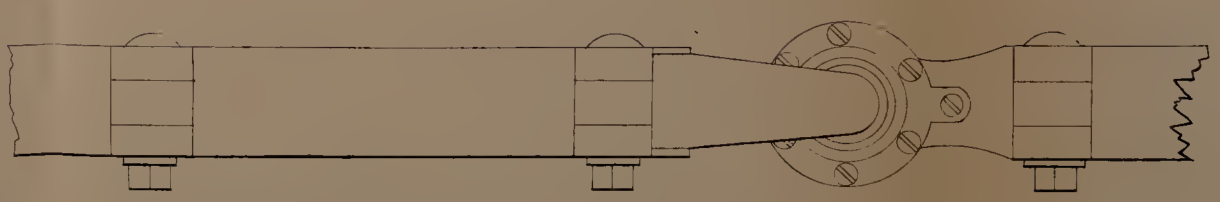


FIG. 11.

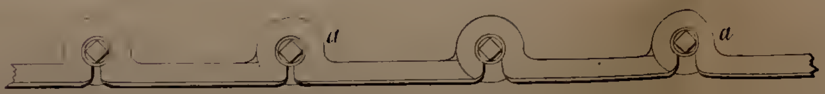


FIG. 12.

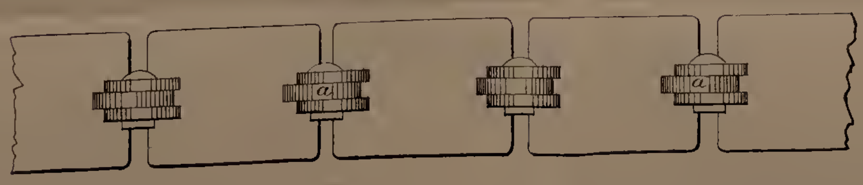


FIG. 13.

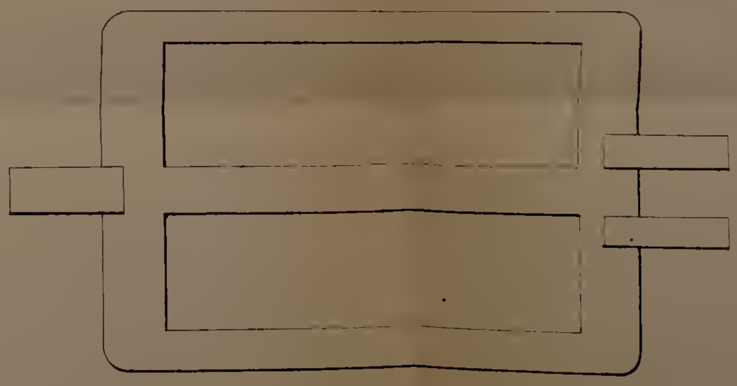


FIG. 15.

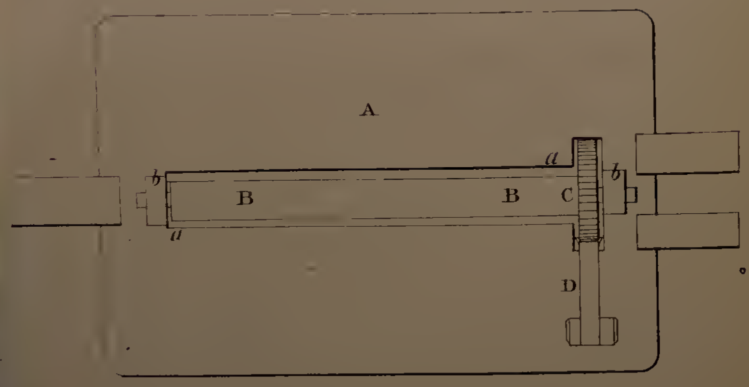
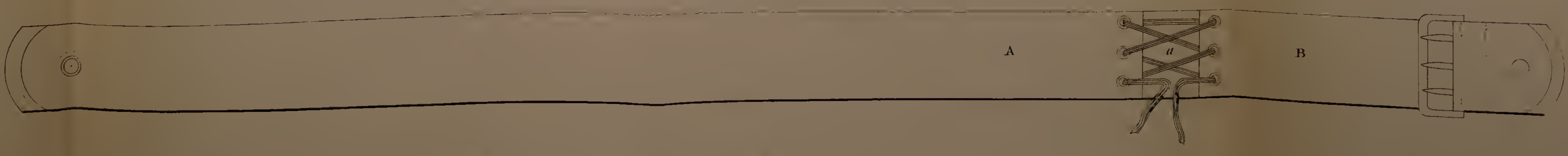


FIG. 14.



The filed drawing is not colored.

London Printed by George Edward Eyre and William Spottiswoode
Printers to the Queen's most Excellent Majesty 1853.

Day & Son [illegible] the Queen